Through-Tubing Perforating System

Provides the flexibility of deep-penetration perforating without removing the completion string

Applications

- Activating additional reservoirs without removing the completion tubing assembly from the wellbore
- Deep penetration through multiple strings of pipe
- Perforation of additional production zones without pulling completion

Features and Benefits

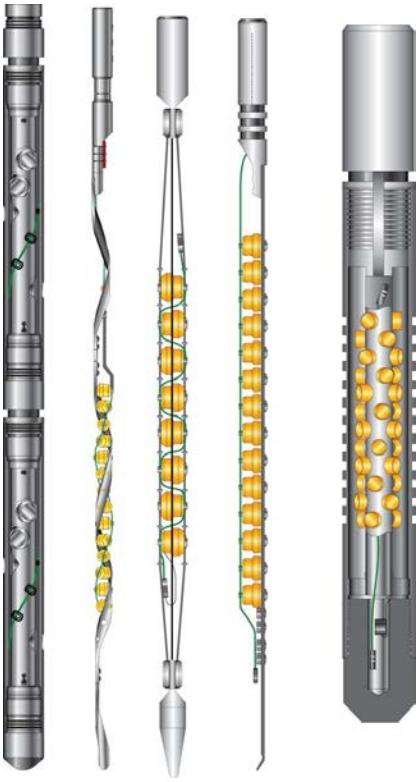
- The system provides high shot densities.
- Deep and super-deep penetration charges are available.
- High-pressure and high-temperature systems are available.
- The system eliminates the need to remove completion tubing.
- The tool provides multiple phasing and shot density configurations.
- Using the tool leads to reductions in re-completion costs.
- Deep penetrating charges maximize the perfect tunnel surface area.

Tool Description

Combining deep penetration, variable phasing, and high shot density, the through-tubing perforating system optimizes production.

Strip perforating systems are available in spiral, 180°, and 0° phasing, and offer deep, through-tubing perforating performance for well-supported casing.

Hollow through-tubing perforating guns offer extended lengths and protection from hostile environments, while limiting debris from perforating services. Hollow gun systems can also be used in gas wells.



The through-tubing perforating system uses retrievable, hollow-gun, and high-shot density systems for through-tubing perforating.

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Through-Tubing Perforating System

Specifications

Strip

Outer diameter	1.69 in. (42.93 mm)	2.13 in. (54.10 mm)	2.5 in. (63.50 mm)
Minimum restriction	1.78 in. (45.21 mm)	2.187 in. (55.55 mm)	2.59 in. (65.79 mm)
Pressure rating*	up to 20,000 psi (137.4 MPa)		
Temperature*	310°F (154°C) RDX / 375°F (191°C) HMX		

*Detailed specifications available upon request.

Hollow Guns

Outer diameter	1.563 in. (39.70 mm)	2.030 in. (51.56 mm)
Pressure rating	22,500 psi (155 MPa)	
Temperature	up to 550°F (288°C)	
Maximum outer diameter before firing	1.568 in. (39.82 mm)	2.032 in. (51.61 mm)
Maximum outer diameter after firing (fluid)	1.63 in. (41.40 mm)	2.08 in. (52.83 mm)
Maximum outer diameter after firing (gas)	0.687 in. (42.85 mm)	2.12 in. (53.98 mm)
Shot density/phasing	4 SPF/0° to 180°	6 SPF/0° to 60°

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